Norristown Area School District:
Utilizing ESCOs & Energy Management Systems

EnergySmart School Close-Ups highlight schools and school districts that have found ways to use energy more wisely, lowering their energy bills and raising awareness of energy issues.

- ✓ *Improving Existing Buildings*
- ✓ *Financing Building Improvements*
- ❑ *Operating and Maintaining Buildings*
- ❑ *Designing New Buildings*
- ❑ *Teaching and Learning*
- ❑ *Using Renewable Energy Technologies*
- ❑ *Using Alternatively Fueled School Buses*

EnergySmart Schools
A Campaign of Rebuild America
U.S. Department of Energy

This Pennsylvania school system opted to finance substantial energy improvements through a energy performance contract with an energy services company or ESCO. This approach enabled the district to avoid large up-front costs while ensuring long-term utility bill savings and more comfortable buildings.

Norristown's Administration Building was renovated along with eight schools to achieve $256,000 in annual savings.

"After six full months...the Norristown Area School District is over $20,000 ahead of the game, net savings after we made the [energy performance contract] payment," said Business Administrator Tom Padden in a 1998 letter thanking the ESCO for its work. "This was a win-win for the school district, the students, and most assuredly, the taxpayers of our school district."

Norristown issued a request for proposals to several ESCOs, ultimately selecting the firm eNERGYSolve.com, then known as SYCOM Enterprises. The ESCO installed and paid for energy-efficient equipment throughout the district. This loan will be repaid through the avoided cost of energy—money the district had already budgeted for utility bills.

Lighting improvements reduce energy consumption

Lighting improvements at nine of the district's schools featured a range of technologies that improved lighting quality while reducing energy use: electronic ballasts, energy-efficient lamps, specular reflectors, and parabolic low-glare luminaires in computer-based classrooms. A detailed analysis after the installation verified that the schools met Pennsylvania's foot-candle level requirements.

PROFILE:

Location:
Norristown, PA

District size:
10 buildings totaling
839,000 square feet

Energy project scope:
New Energy
Management System,
lighting, HVAC retrofits

Date completed:
1998

Energy saved:
806 kW annually
2 million kWh annually

Dollars saved:
$256,000 annually

Project funding:
Energy Savings
Performance Contract

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Variable frequency drives improve energy efficiency

Improvements to the heating and cooling system focused on a technology commonly used to improve energy efficiency—variable frequency drives, or VFDs. The district installed 29 VFDs in air handling units and return air systems to achieve a fan speed reduction of 20 percent, and another VFD on the cooling tower pump to reduce flow by 20 percent.

"The Norristown Area School District is over $20,000 ahead of the game....This was a win-win for the school district, the students, and most assuredly, the taxpayers of our school district."

Tom Padden , Business Administrator,
Norristown Area School DIstrict

Energy management systems monitor usage trends

The district also improved its overall operation of energy-consuming systems by installing energy management systems in two elementary schools and two administrative buildings. These systems help ensure the consistent comfort of both students and staff while providing important data to the district's facilities team.

See the EnergySmart Schools Web site at:
www.eren.doe.gov/energysmartschools

Or call the Energy Efficiency and Renewable Energy Clearinghouse (EREC) at: 1-800-DOE-3732

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